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File 0081300-04

Mr. John Seymour, P.E.
YCRG Project Coordinator
GeoSyntec Consultants
55 W. Wacker Drive, Suite 1100
Chicago, IL 60601

Subject: June 2003 Groundwater Monitoring Report
Yeoman Creek Landfill Superfund Site
Waukegan, Illinois

Dear Mr. Seymour:

Weaver Boos Consultants, Inc. (Weaver Boos), sub-consultant to TJ Lambrecht Construction, Inc., (TJ Lambrecht) has completed the above referenced monitoring for the Yeoman Creek Landfill Superfund (YCLS) Site located in Waukegan, Illinois. The Yeoman Creek Superfund Site includes Yeoman Creek Landfill, Edwards Field Landfill, and Rubloff Landfill.

Content and formatting of this report is based on previous reports prepared by Parsons Engineering Science, Inc. and the June 5, 2002 email correspondence from Mr. John Seymour to Amy Powers of Weaver Boos.

June 2003 Monitoring Event

Weaver Boos was present at the YCLS Site to conduct the necessary fieldwork for groundwater and leachate sample collection and groundwater level measurements from June 23, 2003 to June 30, 2003. The subject monitoring event included a total of 74 monitoring locations as follows: 43 groundwater wells, 3 leachate wells, and 28 landfill gas probes (see **Figure 1**). A summary of the June 2003 Monitoring Event is provided as **Table 1**. The scope of the June 2003 sampling event was specified in a Weaver Boos correspondence dated May 30, 2003. The May 30, 2003 correspondence assumed that the scope of the June 2003 sampling event was the same scope as the June 2002 sampling event, which excluded certain wells. Therefore, during the June 2003

sampling event, field parameters were obtained, but groundwater samples were not collected from the following locations:

MW-301	MW-C	MW-F	MW-405
MW-B	MW-D	MW-G	MW-406

Groundwater elevations were collected from each of the 74 monitoring locations with the exception of three landfill gas probes. Landfill gas probes LFG-105 and LFG-110 were not located, and LFG-106 is damaged so that measurements could not be obtained. In addition, the PVC casing of monitoring well MW-104 was damaged, and TJ Lambrecht was notified of this on the first day of the event. In order to obtain a water level and sample MW-104, the upper five-foot portion of the PVC casing was removed. The new top of casing was surveyed in order to convert the depth to water obtained to a groundwater elevation. Field parameters were collected from 43 groundwater wells and 3 leachate wells.

Field work was performed in accordance with the site specific Field Sampling Plan (FSP) prepared by GeoSyntec Consultants, dated August 2001, and the Pre-Design Data Collection Activities Quality Assurance Project Plan (QAPjP) prepared by Parsons Engineering Sciences, Inc. dated August 1999.

A representative from R.F. Weston was present on-site to oversee sampling activities on behalf of the USEPA.

Groundwater and Leachate Sampling

Depth to groundwater measurements were taken over a one-day period at the beginning of the sampling event, prior to purging any of the wells so as to obtain measurements that would provide an accurate representation of the groundwater and leachate flow in the vicinity of the site (see **Table 2**).

The wells were purged with dedicated tubing and a peristaltic pump using a low-flow technique. A flow through cell was used to measure pH, temperature, conductivity, dissolved oxygen, and oxidation-reduction potential. Turbidity was measured using a separate turbidity meter. A colorimeter and mixing agents were used to field test for ferrous iron in accordance with the FSP. The field measurements collected from each well and are included on **Table 3**.

Groundwater samples were collected from 22 Shallow Zone monitoring wells, 20 Lower Outwash monitoring wells, 1 bedrock well, and 3 leachate monitoring wells (See **Table 1**). Field

parameters were comprised of field pH, specific conductivity, dissolved oxygen, ferrous iron, temperature, turbidity, and oxidation-reduction potential.

In accordance with the QAPjP, quality assurance/quality control (QA/QC) samples were collected during the sampling event. Four duplicate samples, three trip blanks, and two matrix spike/matrix spike duplicates were collected for laboratory analysis.

As noted above, although groundwater samples were not collected from MW-301, MW-B, MW-C, MW-D, MW-F, MW-G, MW-405 and MW-406, field parameters were measured at these locations.

Laboratory Analytical Results

Samples obtained from thirty-five (35) groundwater and three (3) leachate wells were analyzed for VOCs, total and dissolved metals, and cyanide. A summary of laboratory analytical results, field parameters, and results of the comparison to 35 IAC 620.410 Standards is included on **Table 3**. Exceedances of the 35 IAC 620.410 Standards are also summarized in **Figures 2** and **3**.

Leachate Wells

Leachate wells LW-101, LW-102, and LW-103, located on Edwards Field Landfill, were sampled during the subject sampling event. The following "checked" parameters were detected in the leachate wells at concentrations above the Groundwater Quality Standards for Class I Potable Groundwater Resources (35 IAC 620.410):

Parameter	LW-101	LW-102	LW-103
Benzene	X	X	
Iron, total	X	X	X
Lead, total	X		
Manganese, total	X	X	X
Iron, dissolved	X	X	X
Manganese, dissolved	X	X	X
Methylene chloride		X	X

Lower Outwash Wells

The following "checked" constituents were detected in Lower Outwash wells at concentrations above the Groundwater Quality Standards for Class I Potable Resources (35 IAC 620.410):

Location	Fe_D	Fe_T	Mn_D	Mn_T	Ni_D	Ni_T	VC
MW-201			X	X	X	X	
MW-205		X					
MW-209	X	X					
MW-213			X	X			
MW-A							X

Fe_D - Iron, Dissolved; **Fe_T** - Iron, Total; **Mn_D** - Manganese, Dissolved; **Mn_T** - Manganese, Total; **Ni_D** - Nickel, Dissolved; **Ni_T** - Nickel, Total; **VC** - Vinyl Chloride

Vinyl chloride was detected at monitoring well MW-A in June 2003 at a concentration of 14 ug/L, which is slightly higher to the concentration detected in December 2002 (10 ug/L).

Shallow Zone Wells

The shallow zone wells consist of wells screened in the lacustrine clays, organics, fluviolacustrine sands and upper outwash. The following "checked" constituents were detected in shallow zone wells at concentrations above the Groundwater Quality Standards for Class I Potable Resources (35 IAC 620.410):

Location	As_D	As_T	Ben	B_D	B_T	Fe_D	Fe_T	Mn_D	Mn_T	VC
MW-102						X	X	X	X	
MW-104						X	X			
MW-106						X	X	X	X	
MW-107								X	X	
MW-110							X			
MW-111						X	X			
MW-202								X	X	
MW-206	X	X		X	X					
MW-208	X	X				X	X	X	X	
MW-210						X	X	X	X	X
MW-211						X	X			
MW-212						X	X	X	X	
MW-215			X			X	X	X	X	
MW-216						X	X	X	X	X
MW-217						X	X	X	X	
MW-402				X	X			X	X	

As_D - Arsenic, Dissolved; **As_T** - Arsenic, Total; **Ben** - Benzene; **B_D** - Boron, Dissolved; **B_T** - Boron, Total; **Fe_D** - Iron, Dissolved; **Fe_T** - Iron, Total, **Mn_D** - Manganese, Dissolved; **Mn_T** - Manganese, Total; **VC** - Vinyl Chloride

During the subject sampling event, vinyl chloride was observed in MW-210 at a concentration of 24 ug/L, which is similar to the concentration observed in December 2002 (27 ug/L). Vinyl chloride was also detected in MW-216 at a concentration of 3.8 ug/L, which is similar to the concentration of 3.3 ug/L observed in December 2002. Also, vinyl chloride was not detected at or above the laboratory reporting limit of 1 ug/L in June 2003 and December 2002 at MW-103, which has historically been observed at concentrations ranging from 2.3 ug/L to 8.3 ug/L.

Bedrock Well

MW-403 is the only monitoring well screened in bedrock. No exceedances of the Groundwater Quality Standards for Class I Potable Resources (35 IAC 620.410) were identified for this well during the subject sampling event. Low flow sampling utilizing a peristaltic pump was unable to be accomplished at MW-403, because the depth to groundwater was 103.38' below ground surface. Therefore, MW-403 was purged and sampled using a polyethylene bailer consistent with previous sampling rounds.

Data Validation

Consistent with the data validation performed by Parsons on the October 2001 groundwater monitoring event (Round 6 of the Pre-Design Data Collection), data validation was performed on 10% of the data for the June 2003 groundwater monitoring results. The following samples underwent data validation were consistent with samples validated during past sampling rounds, which are from monitoring well locations that have been subject to scrutiny under the Pre-Design Data Collection Program:

- MW-103
- MW-210
- MW-216
- MW-A
- MW-E2

Exponent of Lake Oswego, Oregon performed the data validation. The data validation report generated by Exponent is attached as **Attachment 1**. The data validation found that the quality control procedures employed by the laboratory during analysis were generally acceptable. A few instances were noted where data validation control specified quality control criteria were not met; however, no samples results were found to require qualification. Therefore, results of the data validation do not influence the analytical results summarized on **Table 3**.

Consistent with data validation performed by Parsons on the October 2001 groundwater monitoring event (Round 6 of the Pre-Design Data Collection), the remainder of the laboratory

data collected during the June 2003 sampling event is subject to a data review that consists of checking for holding times, sample temperature, sample receipt, chain of custody, etc. Results of this data review are presented below.

Each sample cooler was received at a temperature less than or equal to 4°C, except one that was received at 5.8°C. Each sample was analyzed within the appropriate holding time. The case narrative for each shipment is included in **Attachment 2**.

Reporting limits for each parameter were compared to those included on Table 1.1 of the QAPjP. For the June 2003 sampling event, the laboratory reporting limits for cyanide (0.01 mg/L) were above the reporting limits specified in Table 1.1, which are 0.005 mg/L for cyanide. After contacting the laboratory regarding this issue, it was discovered that the reporting limits of 0.01 mg/L for cyanide are the lowest concentrations the analytical laboratory can reliably achieve, without reporting an estimated value. The analytical laboratory indicated that they can report lower than the reporting limit; however, these concentrations would initially be estimated, and therefore flagged as such by the laboratory. The laboratory reporting limits were the practical quantitation limits (PQL). However, the lower limits would be closer to a method detection limit (MDL). Values between the MDL and PQL would be estimated. For VOC analysis, samples from LW-103 were reported at higher reporting limits due to concentrations of some parameters detected in the leachate samples.

Potentiometric Surface Maps

The depth to groundwater data from the wells screened within the lower outwash was used to generate a groundwater potentiometric surface map. As shown on **Figure 4**, groundwater flow for the lower outwash is generally towards the northeast.

The depth to groundwater data from the leachate wells and the landfill gas probes was used to create **Figure 5** (Potentiometric Surface Map for Leachate). The leachate elevation contours at Edwards Field generally show a radial leachate gradient directed outward from the landfill. The leachate elevation contours at East Yeoman Creek Landfill also generally show a radial leachate flow directed outward from the landfill.

We trust that this information is sufficient for your needs at this time. If you have any questions, comments, or suggestions regarding the data presented in this groundwater report, please contact us at your convenience.

Very truly yours,

Weaver Boos Consultants, Inc.

Amy M. Powers
Project Geologist

Michael B. Maxwell, LPG
Project Manager

Attachments: Tables
Figures
Attachment 1 – Data Validation Report
Attachment 2 – Case Narratives

Tables

Table 1
Summary of Quarterly Monitoring - June 2003
Yeoman Creek Landfill
Waukegan, Illinois

Sample Description	Water Levels	Field Parameters	VOCs, Metals, & Cyanide*
Groundwater Monitoring Wells			
MW-101	X	X	X
MW-102	X	X	X
MW-103	X	X	X
MW-104	X	X	X
MW-105	X	X	X
MW-106	X	X	X
MW-107	X	X	X
MW-108	X	X	X
MW-109	X	X	X
MW-110	X	X	X
MW-111	X	X	X
MW-112	X	X	X
MW-201	X	X	X
MW-202	X	X	X
MW-203	X	X	X
MW-204	X	X	X
MW-205	X	X	X
MW-206	X	X	X
MW-207	X	X	X
MW-208	X	X	X
MW-209	X	X	X
MW-210	X	X	X
MW-211	X	X	X
MW-212	X	X	X
MW-213	X	X	X
MW-214	X	X	X
MW-215	X	X	X
MW-216	X	X	X
MW-217	X	X	X
MW-301	X	X	
MW-401	X	X	X
MW-402	X	X	X
MW-403	X	X	X
MW-405	X	X	
MW-406	X	X	
MW-A	X	X	X
MW-B	X	X	
MW-C	X	X	
MW-D	X	X	
MW-E1	X	X	X
MW-E2	X	X	X
MW-F	X	X	
MW-G	X	X	
Leachate Monitoring Wells			
LW-101	X	X	X
LW-102	X	X	X
LW-103	X	X	X

* Samples were analyzed for VOCs, metals (total and dissolved phases) and cyanide as listed on Table A2, Initial Parameter List, Yeoman Creek Landfill Superfund Site, Waukegan, Illinois, provided by GeoSyntec Consultants.

Table 1
Summary of Quarterly Monitoring - June 2003
Yeoman Creek Landfill
Waukegan, Illinois

Sample Description	Water Levels	Field Parameters	VOCs, Metals, & Cyanide*
Landfill Gas Probes			
LFG-101	X		
LFG-102	X		
LFG-103	X		
LFG-104	X		
LFG-105	X		
LFG-106	X		
LFG-107	X		
LFG-108	X		
LFG-109	X		
LFG-110	X		
LFG-111	X		
LFG-201	X		
LFG-202	X		
LFG-203	X		
LFG-204	X		
LFG-205	X		
LFG-206	X		
LFG-207	X		
LFG-208	X		
LFG-211	X		
LFG-216	X		
LFG-218	X		
LFG-219	X		
LFG-220	X		
LFG-221	X		
LFG-222	X		
LFG-223	X		
LFG-224	X		

* Samples were analyzed for VOCs, metals (total and dissolved phases) and cyanide as listed on Table A2, Initial Parameter List, Yeoman Creek Landfill Superfund Site, Waukegan, Illinois, provided by GeoSyntec Consultants.

Table 2
Summary of Groundwater Elevations
June 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Location ID	Top of PVC* (MSL)	Total Well Depth* (feet)	Depth to Water 06-03 (feet)	Groundwater Elevation 06-03 (MSL)
Shallow Zone Wells				
Lacustrine Clays, Organics, Sand Lenses				
MW-204	662.45	22.67	16.41	646.04
MW-206	663.75	21.83	10.20	653.55
MW-208	659.31	21.31	10.51	648.80
MW-402	657.25	20.28	4.51	652.74
Fluviolacustrine Sands				
MW-102	653.53	23.77	6.94	646.59
MW-104	648.25	21.02	1.72	646.53
MW-106	654.96	20.26	6.56	648.40
MW-107	656.46	21.59	9.31	647.15
MW-108	654.59	25.22	7.92	646.67
MW-110	653.18	25.25	6.79	646.39
MW-111	655.64	25.27	8.60	647.04
MW-202	660.01	27.82	8.80	651.21
MW-210	651.81	26.15	4.96	646.85
MW-211	658.81	41.93	11.92	646.89
MW-212	658.87	18.79	12.02	646.85
MW-214	653.54	24.29	5.81	647.73
MW-215	654.80	20.27	5.59	649.21
MW-216	657.47	24.77	10.78	646.69
Upper Outwash				
MW-217	651.68	17.84	3.96	647.72
MW-406	661.19	32.91	18.04	643.15
MW-E1	664.75	33.81	21.28	643.47
MW-G	664.96	24.63	6.61	658.35

* - Top of PVC Elevations for groundwater wells provided by Parsons Engineering Sciences, Inc.
Water levels obtained on June 23, 2003.

Table 2
Summary of Groundwater Elevations
June 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Location ID	Top of PVC* (MSL)	Total Well Depth* (feet)	Depth to Water 06-03 (feet)	Groundwater Elevation 06-03 (MSL)
Lower Outwash Wells				
MW-101	653.63	40.25	7.02	646.61
MW-103	652.19	50.28	5.67	646.52
MW-105	654.79	45.37	7.61	647.18
MW-109	653.49	64.59	8.86	644.63
MW-112	649.45	39.87	3.11	646.34
MW-201	659.80	57.36	13.40	646.40
MW-203	663.00	68.51	19.61	643.39
MW-205	664.13	74.55	20.48	643.65
MW-207	658.50	47.02	14.63	643.87
MW-209	651.75	46.91	5.18	646.57
MW-213	653.89	47.11	7.30	646.59
MW-301	678.74	45.36	20.78	657.96
MW-401	657.53	60.77	14.10	643.43
MW-405	661.82	62.94	16.78	645.04
MW-A	655.54	50.18	8.36	647.18
MW-B	654.49	58.74	7.84	646.65
MW-C	655.31	49.51	10.60	644.71
MW-D	655.33	36.96	8.54	646.79
MW-E2	664.71	53.92	20.51	644.20
MW-F	660.30	43.27	16.39	643.91
Bedrock Well				
MW-403	657.63	174.75	103.38	554.25
Leachate Wells				
LW-101	655.70	15.09	8.41	647.29
LW-102	656.94	13.31	8.85	648.09
LW-103	654.93	15.11	5.19	649.74

* - Top of PVC Elevations for groundwater wells provided by Parsons Engineering Sciences, Inc.
Water levels obtained on June 23, 2003.

Table 2
Summary of Groundwater Elevations
June 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Location ID	Top of PVC* (MSL)	Total Well Depth* (feet)	Depth to Water 06-03 (feet)	Groundwater Elevation 06-03 (MSL)
Landfill Gas Probes				
LFG-101	652.77	10.03	7.86	644.91
LFG-102	654.01	10.13	6.92	647.09
LFG-103	655.37	10.13	8.61	646.76
LFG-104	654.23	10.15	8.94	645.29
LFG-105	654.55	8.85	REMOVED	
LFG-106	653.93	9.06	OBSTRUCTED	
LFG-107	652.64	5.54	7.31	645.33
LFG-108	654.44	9.24	DRY	<645.20
LFG-109	652.39	7.68	5.65	646.74
LFG-110	652.19	9.92	TEMPORARILY INACCESSIBLE	
LFG-111	654.01	10.22	9.48	644.53
LFG-201	660.68	8.24	DRY	<652.44
LFG-202	662.33	9.98	7.49	654.84
LFG-203	663.76	10.06	DRY	<653.70
LFG-204	658.34	10.33	7.20	651.14
LFG-205	656.72	10.28	9.16	647.56
LFG-206	659.46	10.35	DRY	<649.11
LFG-207	657.02	10.32	7.20	649.82
LFG-208	657.80	10.12	9.71	648.09
LFG-211	660.81	7.48	4.92	655.89
LFG-216	656.62	10.20	5.90	650.72
LFG-218	662.19	6.73	DRY	<655.46
LFG-219	661.83	10.10	8.74	653.09
LFG-220	660.32	10.16	DRY	<650.16
LFG-221	660.04	10.21	DRY	<649.83
LFG-222	663.38	7.87	DRY	<655.51
LFG-223	660.83	9.82	8.76	652.07
LFG-224	665.28	9.97	DRY	<655.31

* - Top of PVC Elevations for groundwater wells provided by Parsons Engineering Sciences, Inc.
Water levels obtained on June 23, 2003.

Table 3
Summary of Analytical Results
Second Quarter 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	LW-101	LW-102	LW-103	MW-101	MW-103	MW-105	MW-109	MW-112	MW-201	MW-203	MW-205	MW-207	MW-209	MW-213	MW-301	MW-401
				LE	LE	LE	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO
Metals/Inorganics - Total (continued)																			
Chromium, total	mg/L	0.1	0.1	0.0065	<0.005	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	0.026	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005
Cobalt, total	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05
Copper, total	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	<0.025
Cyanide, total	mg/L	0.02	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01
Iron, total	mg/L	5	NA	*34.2*	*15.7*	*26.6*	3.8	<0.1	3.5	3.4	3.8	2.1	<0.1	*5.3*	3.2	*8.8*	0.3	NS	0.5
Lead, total	mg/L	0.0075	0.015	**0.047**	0.0049	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	NS	<0.003
Magnesium, total	mg/L	NA	NA	69.2	118.0	103.0	85.2	73.0	76.0	113.0	75.9	62.0	45.9	106.0	83.9	68.3	64.6	NS	50.2
Manganese, total	mg/L	0.15	NA	*0.320*	*0.320*	*0.350*	0.048	0.020	0.024	0.019	0.075	*0.170*	<0.015	0.056	0.029	0.075	*0.170*	NS	0.018
Mercury, total	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.00023	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002
Nickel, total	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	*0.12*	<0.04	<0.04	<0.04	<0.04	<0.04	NS	<0.04
Potassium, total	mg/L	NA	NA	15.3	63.1	33.0	5.6	21.2	14.7	<5	<5	5.5	<5	<5	31.8	<5	10.9	NS	29.1
Selenium, total	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005
Sodium, total	mg/L	NA	NA	23.2	119.0	136.0	162.0	115.0	87.4	119.0	134.0	211.0	33.8	111.0	84.9	63.9	161.0	NS	72.8
Vanadium, total	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05
Zinc, total	mg/L	5	NA	0.1	0.15	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	NS	<0.02
Metals - Dissolved																			
Aluminum, dissolved	mg/L	NA	NA	<0.2	<0.2	0.32	<0.2	<0.2	<0.2	<0.2	<0.2	0.23	<0.2	<0.2	<0.2	<0.2	<0.2	NS	0.23
Antimony, dissolved	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01
Arsenic, dissolved	mg/L	0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01
Barium, dissolved	mg/L	2	2	0.48	0.41	<0.2	<0.2	<0.2	0.24	<0.2	<0.2	0.32	<0.2	0.68	0.38	<0.2	0.20	NS	0.53
Beryllium, dissolved	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005
Boron, dissolved	mg/L	2	NA	0.68	0.69	0.84	<0.2	0.27	0.36	0.33	<0.2	<0.2	0.23	0.31	0.51	<0.2	0.46	NS	0.46
Cadmium, dissolved	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NS	<0.002
Calcium, dissolved	mg/L	NA	NA	133.0	153.0	238.0	148.0	126.0	111.0	126.0	145.0	147.0	34.7	146.0	140.0	176.0	167.0	NS	105.0
Chromium, dissolved	mg/L	0.1	0.1	<0.005	<0.005	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005
Cobalt, dissolved	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05
Copper, dissolved	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	<0.025
Iron, dissolved	mg/L	5	NA	*24.5*	*17.9*	*31.5*	3.8	<0.1	3.5	3.2	3.7	2.0	<0.1	4.0	3.6	*9.7*	1.0	NS	<0.1
Lead, dissolved	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	NS	<0.003
Magnesium, dissolved	mg/L	NA	NA	62.0	126.0	117.0	84.7	71.9	73.2	108.0	75.4	61.6	45.3	101.0	86.3	71.6	64.0	NS	57.9
Manganese, dissolved	mg/L	0.15	NA	*0.200*	*0.330*	*0.390*	0.046	0.021	0.023	0.018	0.077	*0.170*	<0.015	<0.015	0.029	0.080	*0.190*	NS	0.022
Mercury, dissolved	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002
Nickel, dissolved	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	*0.12*	<0.04	<0.04	<0.04	<0.04	<0.04	NS	<0.04
Potassium, dissolved	mg/L	NA	NA	14.6	63.5	37.8	5.4	20.6	14.0	<5	<5	5.4	<5	<5	34.4	<5	10.2	NS	33.4
Selenium, dissolved	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005
Sodium, dissolved	mg/L	NA	NA	23	120	154	159	113	84	116	134	209	33	109	89	67	159	NS	85
Vanadium, dissolved	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05
Zinc, dissolved	mg/L	5	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NS	0.024

Notes:

Exceedance of IAC 620.410 Class I Standards indicated by *0.43*

Exceedance of Federal Drinking Water MCLs indicated by 0.039

Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**

NA - Not Available

NS - Not Sampled

LE - Leachate

LO - Lower Outwash

SZ - Shallow Zone

Table 3
Summary of Analytical Results
Second Quarter 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-403	MW-405	MW-A	MW-B	MW-C	MW-D	MW-E2	MW-F	MW-102	MW-104	MW-106	MW-107	MW-108	MW-110	MW-111	MW-202
				LO	LO	LO	LO	LO	LO	LO	LO	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ
Field Parameters																			
Dissolved Oxygen	mg/L	NA	NA	2.81	6.05	8.66	0.03	9.34	14.30	10.71	0.61	10.94	11.84	17.64	0.00	0.00	10.45	0.16	0.34
Ferrous Iron	ppm	NA	NA	0.32	0.63	0.36	0.97	3.52	8.34	1.19	16.68	20.52	12.36	34.40	4.79	1.68	15.48	17.16	4.59
pH	s.u.	6.5-9.0	NA	8.14	7.40	7.20	7.23	7.29	7.22	7.28	6.90	7.22	7.26	7.19	6.96	7.17	7.06	6.75	6.83
Redox Potential	mV	NA	NA	138	-54	-108	-68	-99	-69	45	-72	-104	-113	-111	-177	-132	-121	-105	-135
Specific Conductivity	umhos	NA	NA	758	1840	1240	697	950	2930	694	2190	2630	3450	2460	1010	1150	2070	2100	6870
Temperature	deg. C	NA	NA	14.09	12.67	13.34	15.30	14.06	13.71	14.60	12.72	12.10	12.43	11.42	11.82	10.18	12.40	10.38	11.74
Turbidity	ntu	NA	1	9.87	11.20	7.48	38.40	585.00	4.59	21.10	45.00	5.71	9.75	9.64	5.45	3.66	6.38	6.00	3.83
Volatile Organic Compounds																			
1,1,2,2-Tetrachloroethane	ug/L	NA	NA	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	600	600	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	5	5	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene	ug/L	70	70	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	75	75	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	NA	NA	<10	NS	<10	NS	NS	NS	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	ug/L	NA	NA	<10	NS	<10	NS	NS	NS	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	ug/L	NA	NA	<10	NS	<10	NS	NS	NS	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	5	5	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	NA	NA	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	NA	100	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	NA	NA	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	NA	NA	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	700	700	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Freon 113	ug/L	NA	NA	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	5	5	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	100	100	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	5	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	ug/L	1000	1000	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	5	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	2	2	<1	NS	**14**	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, total	ug/L	10000	10000	<1	NS	<1	NS	NS	NS	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1
Metals/Inorganics - Total																			
Aluminum, total	mg/L	NA	NA	<0.2	NS	<0.2	NS	NS	NS	0.31	NS	<0.2	1.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Antimony, total	mg/L	0.006	0.006	<0.01	NS	<0.01	NS	NS	NS	<0.01	NS	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic, total	mg/L	0.05	0.01	<0.01	NS	<0.01	NS	NS	NS	<0.01	NS	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium, total	mg/L	2	2	<0.2	NS	<0.2	NS	NS	NS	<0.2	NS	<0.2	0.72	0.26	<0.2	<0.2	<0.2	0.43	0.68
Beryllium, total	mg/L	0.004	0.004	<0.005	NS	<0.005	NS	NS	NS	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron, total	mg/L	2	NA	0.7	NS	0.24	NS	NS	NS	0.2	NS	0.20	1.00	0.24	<0.2	<0.2	0.47	0.49	0.67
Cadmium, total	mg/L	0.005	0.005	<0.002	NS	<0.002	NS	NS	NS	<0.002	NS	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium, total	mg/L	NA	NA	14.2	NS	114.0	NS	NS	NS	46.1	NS	261.0	59.8	292.0	98.7	97.0	119.0	207.0	377.0

Notes:
Freon 113 is 1,1,2-Trichloro-1,2,2-trifluoroethane.
Exceedance of IAC 620.410 Class I Standards indicated by *0.43*
Exceedance of Federal Drinking Water MCLs indicated by 0.039
Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**
NA - Not Available
NS - Not Sampled
LE - Leachate
LO - Lower Outwash
SZ - Shallow Zone

Table 3
Summary of Analytical Results
Second Quarter 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-403	MW-405	MW-A	MW-B	MW-C	MW-D	MW-E2	MW-F	MW-102	MW-104	MW-106	MW-107	MW-108	MW-110	MW-111	MW-202
				LO	LO	LO	LO	LO	LO	LO	LO	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ
Metals/Inorganics - Total (continued)																			
Chromium, total	mg/L	0.1	0.1	<0.005	NS	<0.005	NS	NS	NS	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt, total	mg/L	1	NA	<0.05	NS	<0.05	NS	NS	NS	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Copper, total	mg/L	0.65	1.3	<0.025	NS	<0.025	NS	NS	NS	<0.025	NS	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Cyanide, total	mg/L	0.02	0.2	<0.01	NS	<0.01	NS	NS	NS	<0.01	NS	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011
Iron, total	mg/L	5	NA	<0.1	NS	2.9	NS	NS	NS	0.7	NS	*15.3*	*9.5*	*17.9*	2.7	2.5	*5.2*	*11.0*	2.2
Lead, total	mg/L	0.0075	0.015	<0.003	NS	<0.003	NS	NS	NS	<0.003	NS	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Magnesium, total	mg/L	NA	NA	7.9	NS	74.3	NS	NS	NS	35.4	NS	62.6	78.9	104.0	39.2	52.0	84.5	103.0	270.0
Manganese, total	mg/L	0.15	NA	<0.015	NS	0.030	NS	NS	NS	0.034	NS	*0.300*	0.068	*0.250*	*0.210*	0.080	0.020	0.086	*0.430*
Mercury, total	mg/L	0.002	0.002	<0.0002	NS	<0.0002	NS	NS	NS	<0.0002	NS	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel, total	mg/L	0.1	NA	<0.04	NS	<0.04	NS	NS	NS	<0.04	NS	<0.04	<0.04	<0.04	<0.04	0.097	<0.04	<0.04	<0.04
Potassium, total	mg/L	NA	NA	<5	NS	<5	NS	NS	NS	5.8	NS	<5	98.9	6.6	12.0	<5	26.1	9.9	35.6
Selenium, total	mg/L	0.05	0.05	<0.005	NS	<0.005	NS	NS	NS	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium, total	mg/L	NA	NA	97.6	NS	56.9	NS	NS	NS	86.3	NS	174.0	244.0	80.1	16.9	61.9	136.0	76.6	665.0
Vanadium, total	mg/L	NA	NA	<0.05	NS	<0.05	NS	NS	NS	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc, total	mg/L	5	NA	<0.02	NS	<0.02	NS	NS	NS	0.056	NS	<0.02	0.091	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Metals - Dissolved																			
Aluminum, dissolved	mg/L	NA	NA	<0.2	NS	<0.2	NS	NS	NS	<0.2	NS	<0.2	1.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Antimony, dissolved	mg/L	0.006	0.006	<0.01	NS	<0.01	NS	NS	NS	<0.01	NS	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic, dissolved	mg/L	0.05	0.01	<0.01	NS	<0.01	NS	NS	NS	<0.01	NS	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium, dissolved	mg/L	2	2	<0.2	NS	<0.2	NS	NS	NS	<0.2	NS	<0.2	0.68	0.24	<0.2	<0.2	<0.2	0.44	0.57
Beryllium, dissolved	mg/L	0.004	0.004	<0.005	NS	<0.005	NS	NS	NS	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron, dissolved	mg/L	2	NA	0.68	NS	0.23	NS	NS	NS	0.20	NS	0.20	1.00	0.23	<0.2	<0.2	0.48	0.50	0.72
Cadmium, dissolved	mg/L	0.005	0.005	<0.002	NS	<0.002	NS	NS	NS	<0.002	NS	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium, dissolved	mg/L	NA	NA	13.7	NS	115.0	NS	NS	NS	45.2	NS	270.0	50.4	264.0	94.0	98.4	122.0	206.0	339.0
Chromium, dissolved	mg/L	0.1	0.1	<0.005	NS	<0.005	NS	NS	NS	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt, dissolved	mg/L	1	NA	<0.05	NS	<0.05	NS	NS	NS	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Copper, dissolved	mg/L	0.65	1.3	<0.025	NS	<0.025	NS	NS	NS	<0.025	NS	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Iron, dissolved	mg/L	5	NA	<0.1	NS	2.9	NS	NS	NS	<0.1	NS	*15.7*	*7.0*	*16.8*	2.5	2.5	5.0	*10.7*	1.0
Lead, dissolved	mg/L	0.0075	0.015	<0.003	NS	<0.003	NS	NS	NS	<0.003	NS	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Magnesium, dissolved	mg/L	NA	NA	7.5	NS	75.1	NS	NS	NS	35.4	NS	65.0	72.6	95.4	37.7	52.7	86.9	104.0	242.0
Manganese, dissolved	mg/L	0.15	NA	<0.015	NS	0.031	NS	NS	NS	0.022	NS	*0.310*	0.020	*0.230*	*0.200*	0.080	0.020	0.086	*0.380*
Mercury, dissolved	mg/L	0.002	0.002	<0.0002	NS	<0.0002	NS	NS	NS	<0.0002	NS	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel, dissolved	mg/L	0.1	NA	<0.04	NS	<0.04	NS	NS	NS	<0.04	NS	<0.04	<0.04	<0.04	<0.04	0.1	<0.04	<0.04	<0.04
Potassium, dissolved	mg/L	NA	NA	<5	NS	<5	NS	NS	NS	5.8	NS	<5	94.8	6.1	12.0	<5	26.7	10.0	31.2
Selenium, dissolved	mg/L	0.05	0.05	<0.005	NS	<0.005	NS	NS	NS	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium, dissolved	mg/L	NA	NA	95	NS	58	NS	NS	NS	89	NS	180	234	75	16	66	142	80	615
Vanadium, dissolved	mg/L	NA	NA	<0.05	NS	<0.05	NS	NS	NS	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc, dissolved	mg/L	5	NA	<0.02	NS	<0.02	NS	NS	NS	0.028	NS	<0.02	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes:

Exceedance of IAC 620.410 Class I Standards indicated by *0.43*

Exceedance of Federal Drinking Water MCLs indicated by 0.039

Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**

NA - Not Available

NS - Not Sampled

LE - Leachate

LO - Lower Outwash

SZ - Shallow Zone

Table 3
Summary of Analytical Results
Second Quarter 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-204	MW-206	MW-208	MW-210	MW-211	MW-212	MW-214	MW-215	MW-216	MW-217	MW-402	MW-406	MW-E1	MW-G
				SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ
Field Parameters																	
Dissolved Oxygen	mg/L	NA	NA	1.72	4.06	6.19	12.85	0.52	7.46	0.00	0.31	7.45	8.85	1.18	13.15	0.29	0.00
Ferrous Iron	ppm	NA	NA	2.29	1.94	21.56	16.44	22.00	21.00	1.34	24.16	22.36	18.16	2.66	11.82	11.90	6.88
pH	s.u.	6.5-9.0	NA	7.47	7.41	7.29	7.24	6.56	7.32	7.57	6.75	7.25	7.32	6.70	7.36	6.80	6.91
Redox Potential	mV	NA	NA	-14	-176	-88	-88	-106	-89	-238	-133	-82	-116	-70	-68	-101	-98
Specific Conductivity	umhos	NA	NA	2540	3620	1810	2040	2090	1210	1610	8020	1660	1340	2590	2620	2560	743
Temperature	deg. C	NA	NA	13.12	13.36	12.21	12.55	13.20	12.89	12.31	11.17	13.24	9.36	13.01	13.98	14.40	12.80
Turbidity	ntu	NA	1	7.48	5.30	5.39	3.27	3.70	3.66	2.68	3.44	7.13	17.20	4.87	20.70	6.96	345.00
Volatile Organic Compounds																	
1,1,2,2-Tetrachloroethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
1,2-Dichlorobenzene	ug/L	600	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
1,2-Dichloroethane	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
1,2-Dichloroethene	ug/L	70	70	<1	<1	2.2	21	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
1,4-Dichlorobenzene	ug/L	75	75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
2-Butanone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<1	NS
4-Methyl-2-Pentanone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<1	NS
Acetone	ug/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<1	NS
Benzene	ug/L	5	5	<1	<1	1.7	<1	<1	2.1	<1	**7.5**	<1	<1	<1	NS	<1	NS
Bromodichloromethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Chlorobenzene	ug/L	NA	100	<1	<1	8.3	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Chloroethane	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Chloroform	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Ethylbenzene	ug/L	700	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Freon 113	ug/L	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Methylene chloride	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Styrene	ug/L	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Tetrachloroethene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Toluene	ug/L	1000	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Trichloroethene	ug/L	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	NS
Vinyl chloride	ug/L	2	2	<1	<1	<1	**24**	<1	<1	<1	<1	**3.8**	<1	<1	NS	<1	NS
Xylenes, total	ug/L	10000	10000	<1	<1	<1	<1	<1	<1	<1	20	<1	<1	<1	NS	<1	NS
Metals/Inorganics - Total																	
Aluminum, total	mg/L	NA	NA	0.55	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	NS	<0.2	NS
Antimony, total	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	NS
Arsenic, total	mg/L	0.05	0.01	<0.01	**0.38**	0.039	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	NS
Barium, total	mg/L	2	2	<0.2	0.22	<0.2	<0.2	0.35	<0.2	0.26	0.34	0.24	<0.2	<0.2	NS	0.63	NS
Beryllium, total	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	NS
Boron, total	mg/L	2	NA	<0.2	*32.2*	0.36	<0.2	0.24	<0.2	<0.2	0.48	<0.2	<0.2	*2.8*	NS	0.58	NS
Cadmium, total	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NS	<0.002	NS
Calcium, total	mg/L	NA	NA	83.9	116.0	178.0	220.0	160.0	134.0	120.0	307.0	184.0	131.0	223.0	NS	195.0	NS

Notes:

Freon 113 is 1,1,2-Trichloro-1,2,2-trifluoroethane.

Exceedance of IAC 620.410 Class I Standards indicated by *0.43*

Exceedance of Federal Drinking Water MCLs indicated by 0.039

Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**

NA - Not Available

NS - Not Sampled

LE - Leachate

LO - Lower Outwash

SZ - Shallow Zone

Table 3
Summary of Analytical Results
Second Quarter 2003 Groundwater Monitoring Event
Yeoman Creek Landfill
Waukegan, Illinois

Parameter Name	Units	35 IAC 620.410 Class I Standard	Federal MCL	MW-204	MW-206	MW-208	MW-210	MW-211	MW-212	MW-214	MW-215	MW-216	MW-217	MW-402	MW-406	MW-E1	MW-G
				SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ	SZ
Metals/Inorganics - Total (continued)																	
Chromium, total	mg/L	0.1	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	NS
Cobalt, total	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	NS
Copper, total	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	<0.025	NS
Cyanide, total	mg/L	0.02	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	NS
Iron, total	mg/L	5	NA	0.2	1.8	*23.0*	*8.3*	*13.1*	*22.5*	0.6	*5.9*	*15.6*	*9.3*	1.4	NS	4.4	NS
Lead, total	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	NS	<0.003	NS
Magnesium, total	mg/L	NA	NA	153.0	133.0	103.0	99.9	85.9	48.4	72.0	135.0	72.1	55.8	66.2	NS	101.0	NS
Manganese, total	mg/L	0.15	NA	0.049	0.120	*0.400*	*0.250*	0.150	*0.260*	0.038	*0.230*	*0.220*	*0.490*	*0.650*	NS	0.087	NS
Mercury, total	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002	NS
Nickel, total	mg/L	0.1	NA	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.063	<0.04	<0.04	<0.04	NS	<0.04	NS
Potassium, total	mg/L	NA	NA	6.5	53.8	14.8	5.4	18.1	<5	<5	167.0	7.8	<5	6.9	NS	23.0	NS
Selenium, total	mg/L	*0.05*	*0.05*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	NS	*<0.005*	NS
Sodium, total	mg/L	NA	NA	206.0	147.0	19.5	61.6	94.6	20.5	72.8	872.0	49.0	68.8	106.0	NS	159.0	NS
Vanadium, total	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	NS
Zinc, total	mg/L	5	NA	0.047	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NS	<0.02	NS
Metals - Dissolved																	
Aluminum, dissolved	mg/L	NA	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1	<0.2	NS	<0.2	NS
Antimony, dissolved	mg/L	0.006	0.006	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	NS
Arsenic, dissolved	mg/L	0.05	0.01	<0.01	**0.3**	0.037	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	<0.01	NS
Barium, dissolved	mg/L	2	2	<0.2	0.21	<0.2	<0.2	0.33	<0.2	0.26	0.34	0.22	<0.2	<0.2	NS	0.64	NS
Beryllium, dissolved	mg/L	0.004	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	NS
Boron, dissolved	mg/L	2	NA	<0.2	*29.80*	0.31	<0.2	0.22	<0.2	<0.2	0.50	<0.2	<0.2	*3.10*	NS	0.59	NS
Cadmium, dissolved	mg/L	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NS	<0.002	NS
Calcium, dissolved	mg/L	NA	NA	73.8	114.0	179.0	223.0	163.0	132.0	118.0	308.0	179.0	135.0	244.0	NS	199.0	NS
Chromium, dissolved	mg/L	0.1	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	NS
Cobalt, dissolved	mg/L	1	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	NS
Copper, dissolved	mg/L	0.65	1.3	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	<0.025	NS
Iron, dissolved	mg/L	5	NA	<0.1	1.3	*22.5*	*8.4*	*12.0*	*22.0*	0.6	*6.4*	*14.7*	*8.7*	1.2	NS	4.2	NS
Lead, dissolved	mg/L	0.0075	0.015	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	NS	<0.003	NS
Magnesium, dissolved	mg/L	NA	NA	159.0	129.0	103.0	102.0	85.2	47.5	70.8	137.0	70.3	57.2	72.7	NS	102.0	NS
Manganese, dissolved	mg/L	0.15	NA	0.071	0.130	*0.400*	*0.240*	0.150	*0.250*	0.038	*0.230*	*0.210*	*0.510*	*0.710*	NS	0.081	NS
Mercury, dissolved	mg/L	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NS	<0.0002	NS
Nickel, dissolved	mg/L	0.1	NA	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.065	<0.04	<0.04	<0.04	NS	<0.04	NS
Potassium, dissolved	mg/L	NA	NA	6.9	51.4	14.6	5.4	16.5	<5	<5	172.0	7.4	<5	7.5	NS	23.5	NS
Selenium, dissolved	mg/L	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	NS
Sodium, dissolved	mg/L	NA	NA	221	141	19	61	98	20	73	890	48	71	117	NS	163	NS
Vanadium, dissolved	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NS	<0.05	NS
Zinc, dissolved	mg/L	5	NA	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.099	<0.02	NS	<0.02	NS

Notes:

Exceedance of IAC 620.410 Class I Standards indicated by *0.43*

Exceedance of Federal Drinking Water MCLs indicated by 0.039

Exceedance of IAC 620.410 Class I Standards and Federal Drinking Water MCLs indicated by **0.26**

NA - Not Available

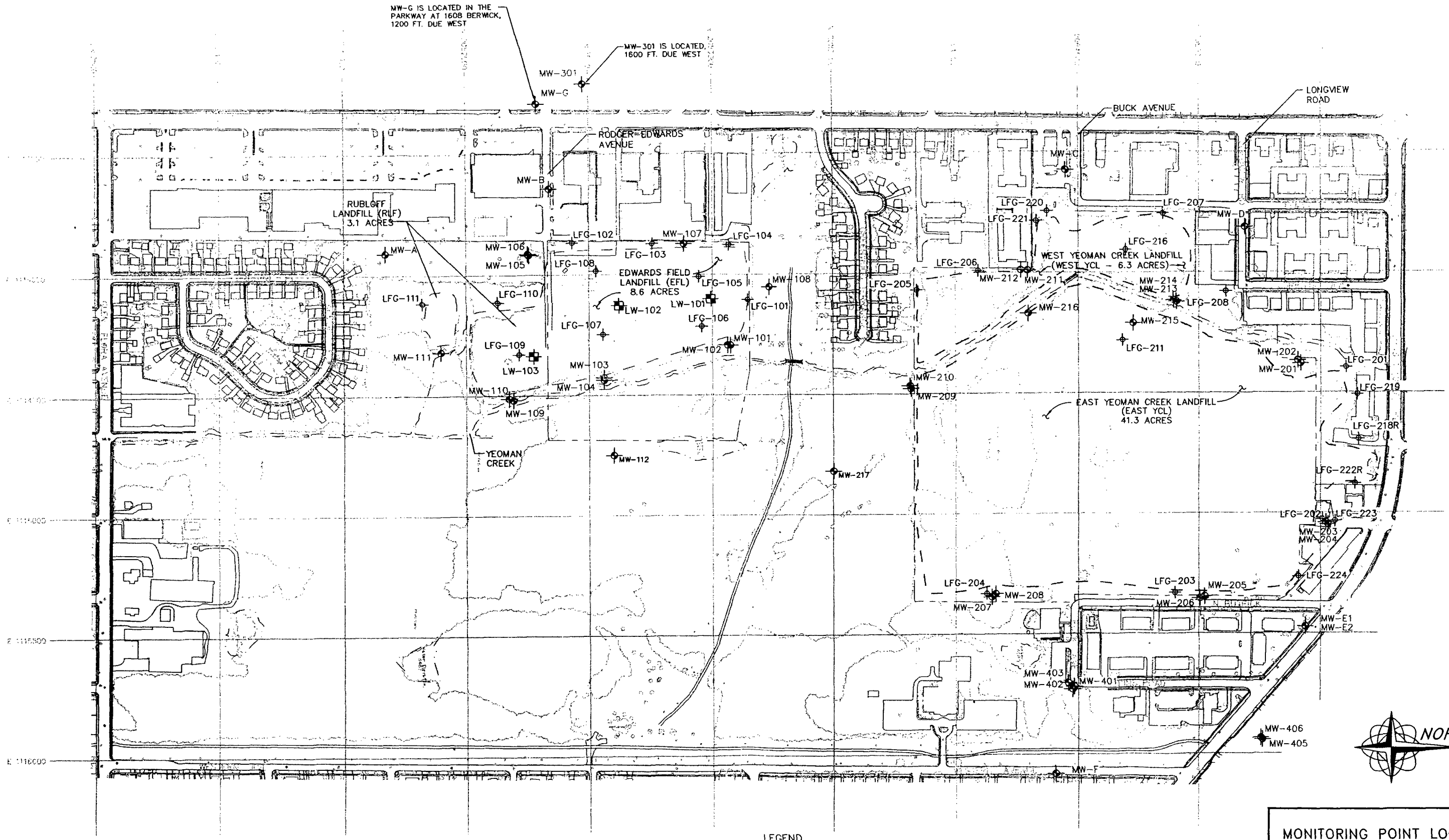
NS - Not Sampled

LE - Leachate

LO - Lower Outwash

SZ - Shallow Zone

Figures



LEGEND

- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- MW-201 GROUNDWATER MONITORING WELL
- LW-201 LEACHATE WELL
- LFG99-8 GAS PROBE
- SURFACE WATER
- TREE LINE
- EXISTING ROAD
- EXISTING TREE
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

SCALE

0 200' 400' 800'

NOTE: LEACHATE WELL LW-201, LW-202, LW-203, AND LW-204 WERE DECOMMISSIONED PRIOR TO THE JUNE 2002 EVENT.

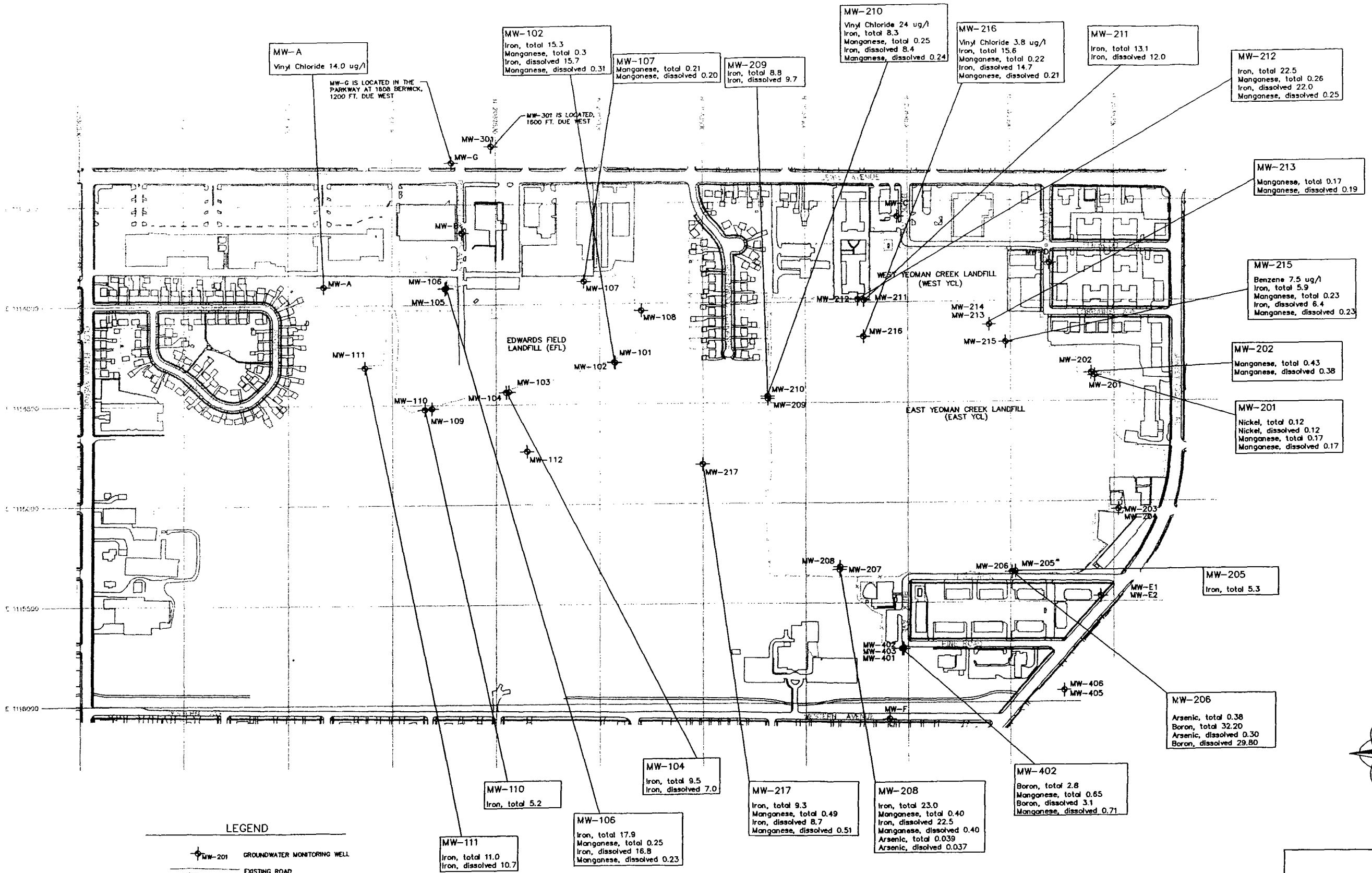
NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

MONITORING POINT LOCATIONS

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos Consultants, Inc.
GRIFFITH, IN FORT WORTH, TX | CHICAGO, IL (312) 922-1030 | DOWNERS GROVE, IL SPRINGFIELD, IL

DRAWN BY: REK	DATE: 08/15/02	FILE: 0081-300-04
REVIEWED BY: AP	CAD:LOCATIONS.DWG	FIGURE 1

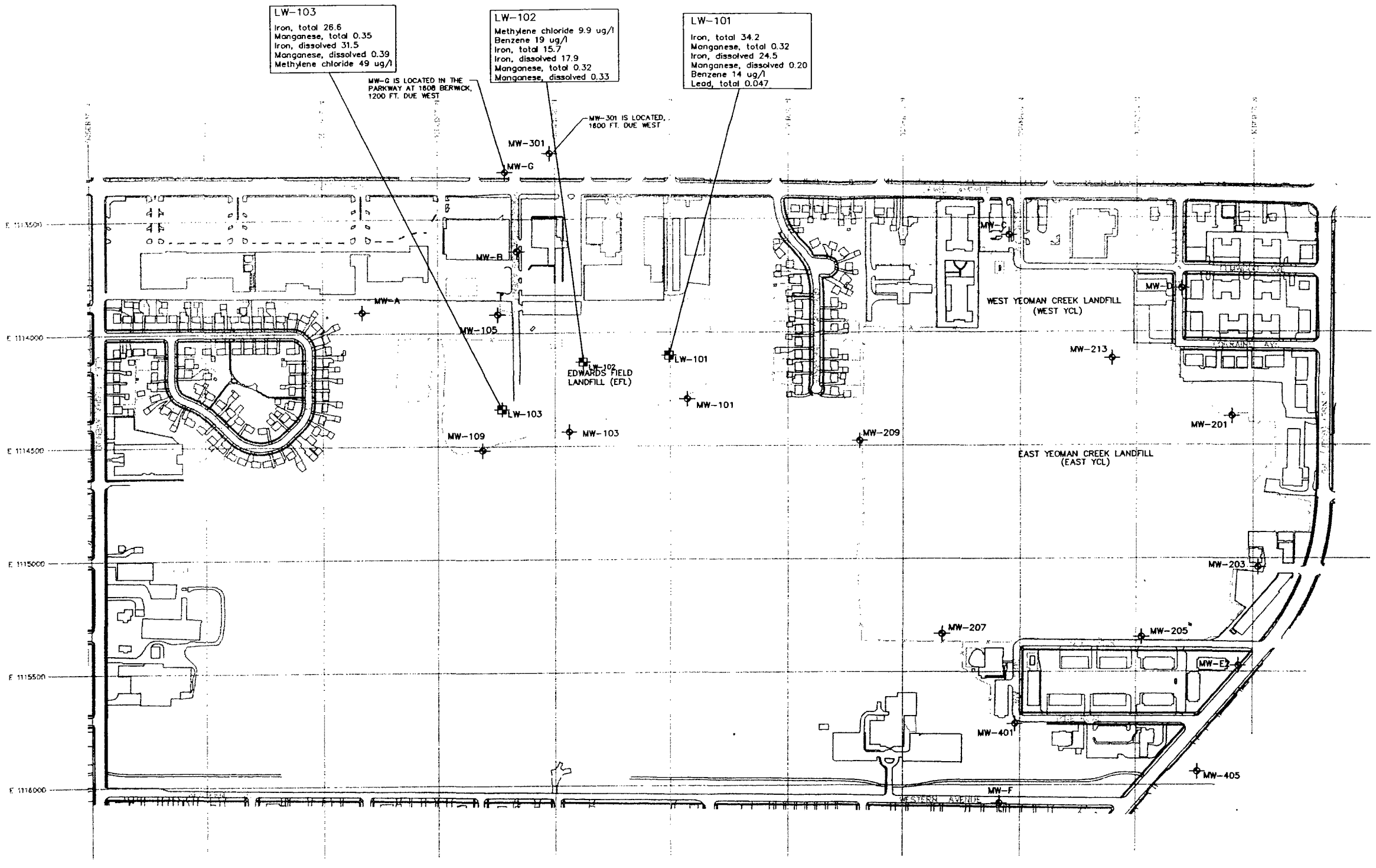


NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

JUNE 2003
IAC 620.410
GROUNDWATER EXCEEDENCES
YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos Consultants, Inc.
GRIFFITH, IN
FORT WORTH, TX
CHICAGO, IL
(312) 922-1030
DOWNERS GROVE, IL
SPRINGFIELD, IL

DRAWN BY: RGB/RAK	DATE: 08/07/03	FILE: 0081-300-04
REVIEWED BY: AP	CAD:0603GW_EXCEED	FIGURE 2



LEGEND

- LW-101 — LEACHATE WELL
- MW-201 — GROUNDWATER MONITORING WELL
- EXISTING ROAD
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

NOTES:

1. All analytical reults are reported in mg/l unless otherwise noted.

NOTE: LEACHATE WELLS LW-201, LW-202, LW-203, AND LW-204 WERE DECOMMISSIONED PRIOR TO THE JUNE 2002 EVENT.

NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

SCALE

0 250' 500' 1,000'

NORTH

JUNE 2003
IAC 620.410
LEACHATE EXCEEDENCES
YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos Consultants, Inc.

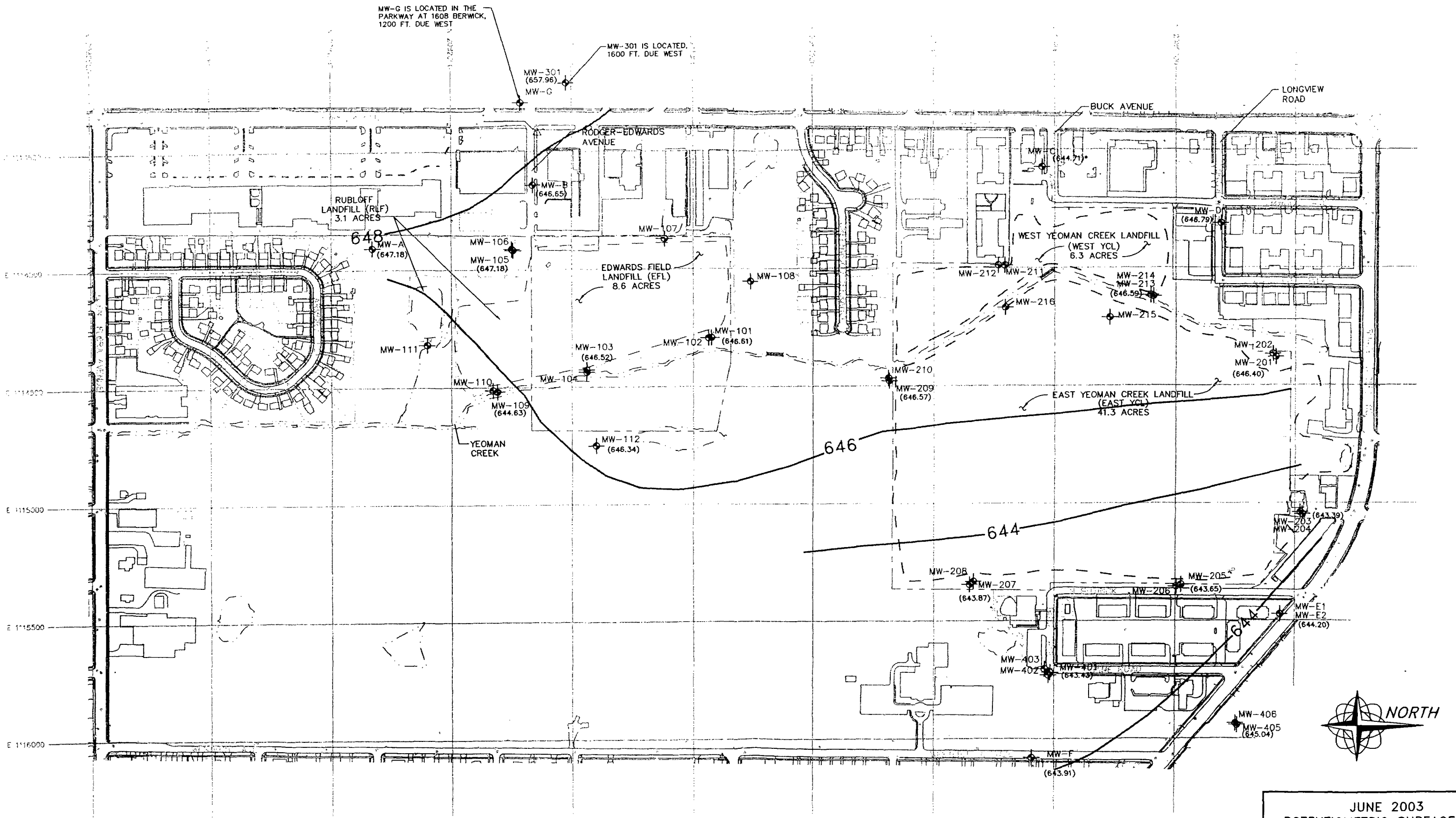
GRIFFITH, IN
FORT WORTH, TX

CHICAGO, IL
(312) 922-1030

DOWNERS GROVE, IL
SPRINGFIELD, IL

DRAWN BY: RGB/RAK | DATE: 08/07/03 | FILE: 0081-300-04

REVIEWED BY: AP | CAD:0803LEACH_EXCEED | FIGURE 3



LEGEND

- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- MW-201 GROUNDWATER MONITORING WELL
- TREE LINE
- EXISTING ROAD
- EXISTING TREE
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

SCALE

0 200' 400' 800'

NOTE: DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

* GROUNDWATER ELEVATION FOR MW-C APPEARS TO BE ANOMALOUSLY LOW IN RELATION TO SURROUNDING DATA, THEREFORE IT WAS NOT UTILIZED WHEN CREATING THIS POTENTIOMETRIC SURFACE MAP.

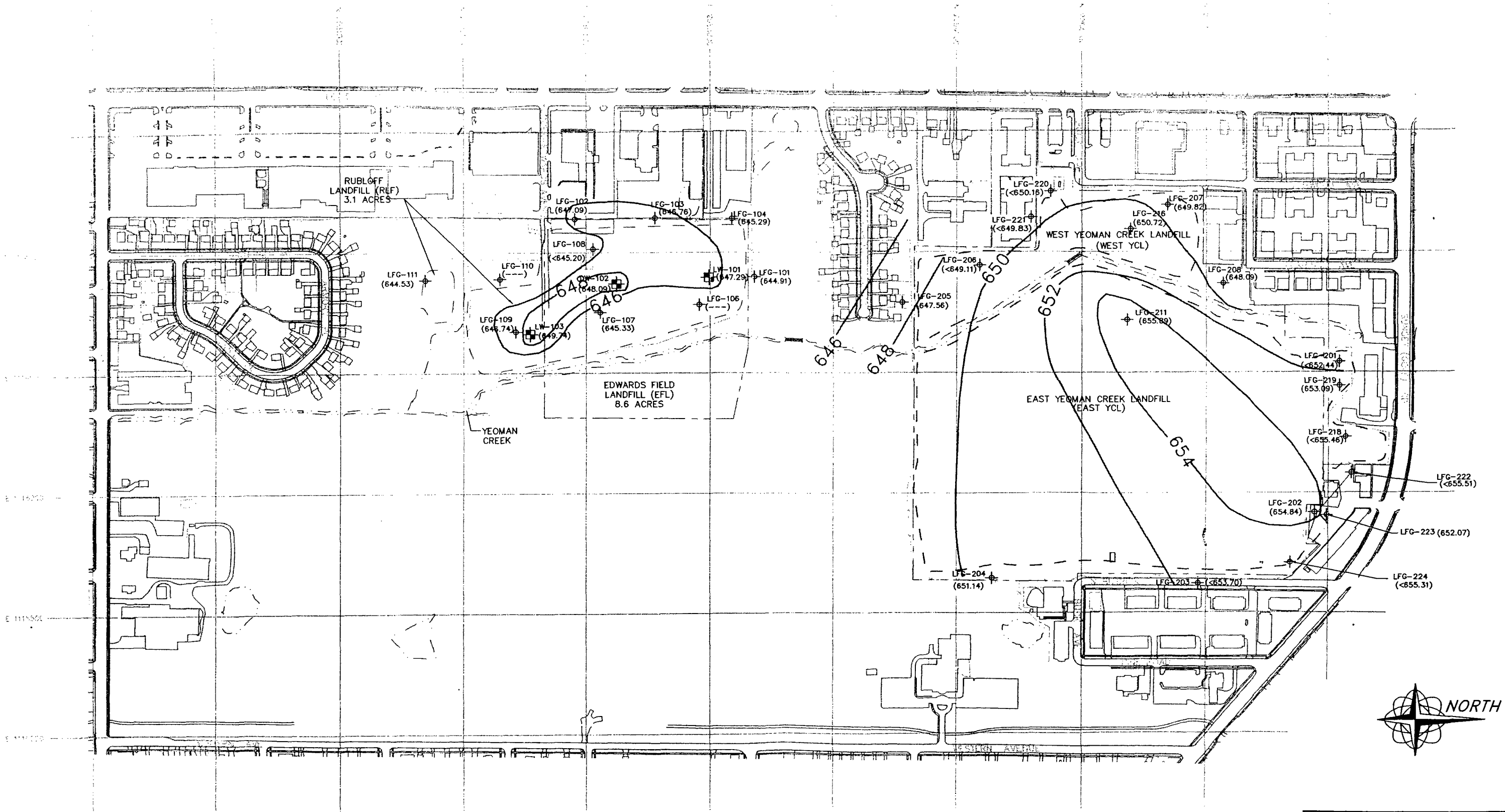
JUNE 2003 POTENTIOMETRIC SURFACE MAP FOR LOWER OUTWASH WELLS

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos Consultants, Inc.

GRIFFITH, IN FORT WORTH, TX | CHICAGO, IL (312) 922-1030 | DOWNERS GROVE, IL SPRINGFIELD, IL

DRAWN BY: CB/RAK	DATE: 08/07/03	FILE: 0081-300-04
REVIEWED BY: RB	CAD:0603POT.DWG	FIGURE 4



NOTES

1.) LEACHATE WELLS LW-201, LW-202, LW-203, AND LW-204 WERE DECOMMISSIONED PRIOR TO THE JUNE 2002 EVENT.

2.) DRAWING ADAPTED FROM DRAWING NO. 2 OF 29 FROM GEOSYNTEC CONSULTANTS, JOB No. 000864-8.4, DATED APRIL 27, 2001 (REMEDIAL DESIGN, YEOMAN CREEK LANDFILL SUPERFUND SITE, WAUKEGAN, ILLINOIS).

3.) DRY WELLS ARE SHOWN WITH ELEVATIONS < THE BOTTOM OF THE WELL.

4.) UNABLE TO OBTAIN LEACHATE LEVEL FROM LFG-106 AS THIS GAS PROBE HAS BEEN DAMAGED.

LEGEND

- 650 — EXISTING GROUND ELEVATION
- APPROXIMATE LIMIT OF WASTE
- APPROXIMATE PROPERTY LINE
- 646 — LEACHATE CONTOUR (DASHED WHERE INFERRED)
- LW-201 — LEACHATE WELL
- LFG-109 — GAS PROBE
- EXISTING ROAD
- HOUSE OR STRUCTURE
- SIDEWALK
- EXISTING FENCE

SCALE

0 200' 400' 800'

JUNE 2003 POTENTIOMETRIC SURFACE MAP FOR LEACHATE WELLS

YEOMEN CREEK LANDFILL
WAUKEGAN, ILLINOIS

Weaver Boos Consultants, Inc.
GRIFFITH, IN FORT WORTH, TX | CHICAGO, IL (312) 922-1030 | DOWNERS GROVE, IL SPRINGFIELD, IL

DRAWN BY: CB/RAK	DATE: 08/07/03	FILE: 0081-300-04
REVIEWED BY: RB	CAD:0603LEACHATE.DWG	FIGURE 5

Attachment 1

Data Validation Report

Exponent

Exponent
4000 Kruse Way Place
Building 2, Suite 285
Lake Oswego, OR 97035

telephone 503-636-4338
facsimile 503-636-4315
www.exponent.com

August 21, 2003

Amy Powers
Weaver Boos Consultants, Inc.
200 South Michigan Avenue, Suite 900
Chicago, Illinois 60604

Subject: Data Validation Report for Yeoman Creek Landfill Superfund Site
Exponent Contract No. 8601524.001 0701

Dear Amy:

This letter documents the results of a quality assurance review of data reported for the analysis of 22 volatile organic compounds (VOCs), 22 metals (total and dissolved fraction), and cyanide (total). The analyses were completed on five unfiltered water samples and five filtered water samples (metals only) that were collected during the June 2003 sampling event at the Yeoman Creek Landfill Superfund Site located in Waukegan, Lake County, Illinois. One data package was submitted to Exponent® for validation in work order A3F260367. Overall, the data reported are of good quality and no results required qualification as estimated (*J*), restatement as undetected (*U*), or rejection (*R*).

The quality assurance review was conducted to verify that the laboratory quality assurance and quality control procedures were documented, and included evaluating the applicable quality control results reported by the laboratory. A summary of the overall quality of the analytical results, data validation procedures, and the analytical methods used to complete the analyses used to complete the analyses is presented below.

Overall Quality of the Analytical Results

The results for all applicable quality control procedures employed by the laboratory during analysis of the samples were generally acceptable. No sample results required qualification as estimated (*J*), restatement as undetected (*U*), or rejection (*R*).

In a few instances, data-validation-specified quality control criteria were not met, as identified during the quality assurance review, and as discussed below.

A 25.3 percent difference between the relative response factor (RRF) for 4-methyl-2-pentanone in the continuing calibration verification (CCV) standard and the average RRF from the initial calibration was reported. This difference is only slightly above the data validation control limit of 25 percent (U.S. EPA 1999). No action was taken because the control limit was only very slightly exceeded and the method-specific alternative (U.S. EPA 1997) of using the average

- Instrument printouts (e.g., chromatograms, mass spectra, and quantification reports) to assess the validity of analyte identification as either detected or undetected and to verify quantification of sample results
- Laboratory summaries of analytical results.

Analytical Methods

Analyses were completed according to the following procedures:

- VOCs (for 22 target analytes) by purge and trap and analysis by gas chromatography/mass spectrometry (GC/MS) using U.S. EPA SW-846 Method 8260B (U.S. EPA 1997)
- Total and dissolved metals (21 target analytes) by digestion and analysis by inductively coupled plasma-atomic emission spectrometry (ICP-AES) using U.S. EPA SW-846 Method 6010B (U.S. EPA 1997) and mercury by digestion and analysis by cold vapor atomic absorption (CVAA) using U.S. EPA SW-846 Method 7470A (U.S. EPA 1997)
- Cyanide by reflux distillation and colorimetric detection using U.S. EPA Method SW-846 Method 9012A (U.S. EPA 1997).

Should you have any questions regarding the information presented herein, please call me at (503) 636-4338.

Cordially,

James J. Mc Ateer, Jr.
Project Manager

cc: Mike Maxwell, Weaver Boos & Gordon

References

U.S. EPA. 1997. Test methods for evaluating solid waste. SW-846. Version 2.0. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

U.S. EPA. 1999. USEPA Contract Laboratory Program national functional guidelines for organic data review. EPA/540/R-99/008. October 1999. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

U.S. EPA. 2002a. USEPA Contract Laboratory Program national functional guidelines for inorganic data review. EPA 540-R-01-008. July 2002. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

WBG. 1999. Pre-design data collection work plan, Appendix B: quality assurance project plan for Yeoman Creek Landfill Superfund Site. Revision II, revised August 1999. Prepared by Parsons Engineering Science, Inc., Oak Brook, IL. Prepared for Weaver Boos & Gordon, Chicago, IL.

Attachment 2

Case Narratives

CASE NARRATIVE

A3F260355

The following report contains the analytical results for twenty-eight water samples and one quality control sample submitted to STL North Canton by Weaver Boos & Gordon Inc. from the Yeoman Creek Landfill Waukegan Site, project number 0081300-04. The samples were received June 26, 2003, according to documented sample acceptance procedures.

STL utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the Analytical Methods Summary page in accordance with the methods indicated. Preliminary results were provided to Mike Maxwell on July 10, 2003.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the coolers upon sample receipt was 3.9, 1.1 and 1.2° C.

See STL's Cooler Receipt Form for additional information.

METALS

No ICP Trace Form IX was provided for batch 3182116. The serial dilution was performed on a sample in lot A3F260367 from this client and from the same QC batch as the samples in this lot.

Method 6010B requires verification of ICP Interelement Correction Factors (IEC's) every six months. The I5 ICP IEC verifications were last completed on January 8, 2003, and the subsequent round of semiannual verifications was not completed by July 8, 2003. This round of verifications will be completed by July 22, 2003. Relative to a six month time frame, two additional weeks are considered insignificant. Also, changes in the IEC's are typically small, and factors affected by the "major" interferents (aluminum, calcium, iron, and magnesium) are verified whenever the instrument is calibrated through the analysis of the interelement correction standards (ICSA/ICSAB).

CASE NARRATIVE
A3G010175

The following report contains the analytical results for eight water samples and one quality control sample submitted to STL North Canton by Weaver Boos & Gordon Inc. from the Yeoman Creek Landfill Site, project number 0081300-04. The samples were received July 1, 2003, according to documented sample acceptance procedures.

STL utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the Analytical Methods Summary page in accordance with the methods indicated. Preliminary results were provided to Mike Maxwell on July 18, 2003.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 5.8° C.

See STL's Cooler Receipt Form for additional information.

METALS

Serial dilution of a sample in this lot indicates that physical and chemical interferences were present. Refer to the sample report pages for the affected analytes flagged with "E".

CASE NARRATIVE

A3F280158

The following report contains the analytical results for thirty-eight water samples and one quality control sample submitted to STL North Canton by Weaver Boos & Gordon Inc. from the Yeoman Creek Landfill Site, project number 0081300-04. The samples were received June 28, 2003, according to documented sample acceptance procedures.

STL utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the Analytical Methods Summary page in accordance with the methods indicated. Preliminary results were provided to Mike Maxwell on July 11, 2003.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the coolers upon sample receipt was 0.9, 1.8 and 2.6° C.

See STL's Cooler Receipt Form for additional information.

METALS

Serial dilution of a sample in this lot indicates that physical and chemical interferences were present. Refer to the sample report pages for the affected analytes flagged with "E".

Method 6010B requires verification of ICP Interelement Correction Factors (IEC's) every six months. The I5 ICP IEC verifications were last completed on January 8, 2003, and the subsequent round of semiannual verifications was not completed by July 8, 2003. This round of verifications will be completed by July 22, 2003. Relative to a six month time frame, two additional weeks are considered insignificant. Also, changes in the IEC's are typically small, and factors affected by the "major" interferents (aluminum, calcium, iron, and magnesium) are verified whenever the instrument is calibrated through the analysis of the interelement correction standards (ICSA/ICSAB).

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U.S. Environmental Protection Agency
77 W. Jackson Blvd.
Mail Code SR-6J
Chicago, IL 60604

Date: 28 August 2003
Project: CHE8092

TRANSMITTAL

✠ ENCLOSED	☐ PLAN	☐ DRILLING LOGS	☐ APPROVED
☐ UNDER SEPARATE COVER	☐ COST ESTIMATE	☐ BADGES	☐ APPROVED AS NOTED
☐ MESSENGER	☐ DRAWINGS	✠ DOCUMENTS	☐ RESUBMIT
☐ FIRST CLASS MAIL	☐ SPECIFICATIONS	☐ CONTRACTS	☐ RETURN
☐ SPECIAL DELIVERY	☐ SHOP DRAWINGS	☐ FOR APPROVAL	☐ CORRECTED PRINTS
☐ HAND DELIVERY	☐ CD/DISKETTE	☐ FOR YOUR USE	☐ FOR COMMENT
✠ FEDEX	☐ PHOTOS	☐ AS REQUESTED	

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Remarks:

Cc: Om Patel, Weston
Erin Rednour, IEPA

Signed: John Seymour, P.E.
GeoSyntec Consultants